

ABSTRACT

An angular velocity detector using a vibrator made of an annular thin film. The detector also has electrodes arranged ingeniously to have high detection sensitivity for angular velocities. The detector can detect angular velocities in two axial directions simultaneously. The detector has support portions (1105), (1106) which are formed over a first substrate (1123) and poised above the surface of the first substrate (1100) at a certain spacing therefrom. Resilient support bodies are supported to the support portions and include outer springs (1102) and inner springs (1103). A vibrator (1101) is mounted via the resilient support. An exciting means consisting of a magnet (1124) and an exciting electrode (1108) excites the vibrator to vibrate in a certain direction of vibrations. When the vibrator (1101) is excited to vibrate in the direction of vibrations by the exciting means and an angular velocity acts from the outside, a displacement detection means consisting of a detection electrode (1109) and electrodes (1120) detects the displacement of the vibrator (1101) in a direction perpendicular to the direction of vibrations in response to the angular velocity. The vibrator (1101) or an angular velocity detection portion including the vibrator (1101) is electromagnetically driven to vibrate.